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REPORT
OF THE
FISH COMMISSIONERS
OF THE
STATE OF WEST VIRGINIA,
FOR THE YEARS 1878-79.



WHEELING:
W: J. JOHNSTON, PUBLIC PRINTER.
1881.

REPORT OF FISH COMMISSIONERS.

To His Excellency, H. M. MATHEWS,

Governor of the State of West Virginia :

We respectfully submit the following report of the Commissioners of Fishes of the State of West Virginia :

And in doing so we are glad to say that the people of the State, seeing the efforts and work of the Commissioners, and the degree of success which has attended their labors are taking an interest in the matter, and beginning to understand and appreciate the great benefits which will result to them from a continuance of the work already begun. In some instances resultant success has come sooner and in larger degrees than ever we anticipated.

The stocking of the waters of New and Greenbrier rivers with black bass has resulted in their increase in those streams to an extent exceeding the most sanguine expectations. In the year 1878, about fifteen hundred black bass (of which about three hundred were mature) fish and spawners were placed in those streams. These fish have multiplied and grown so rapidly, that now the New and Greenbrier, which prior to 1878 contained no fish of much value (except blue cats,) for miles on either side of the points at which the plants were made, are actually swarming with black bass weighing from one to four pounds, and these streams may now be considered as permanently stocked with this game fish of excellent food qualities and flavor.

These facts are attested by the personal observation of the Commissioner for the third district, and by the verbal and written statements made to him by various persons. For instance, Dr. C. Sydney, of Hinton, W. Va, writes: "I have never seen better fishing with line and rod than is now to be had at New river falls; I caught over forty-five large bass in one day's fishing, and could have caught more if I had had bait."

N. B. Wiggins, of Summers county, reports great numbers of black bass at his place on Greenbrier river, and also the taking of several *land locked salmon*.

James Boyd, of Summers, also sends the same report, except as to salmon.

There are numerous other letters from persons living on these streams which contain substantially the same statements, all tending to confirm beyond a doubt the statement, that these rivers which were in 1878 devoid of valuable fish, except as hereinbefore stated are now finely stocked with bass, a fish easily taken with rod and line, of fine flavor and quality, and affording good sport to the angler.

Some years ago, before the organization of this commission, Professor Spencer F. Baird, United States Fish Commissioner, caused a number of young shad to be placed in the waters of New river. The planting of these shad was an experiment which was considered of very little hope at the time, but we are glad to report that several fine specimens of shad have been taken at Huntington on the Ohio. We have heard that others have been taken, and from the information received by the Commissioner of the Third District, we are induced to believe that in the last year, these most valuable fish have been up the Kanawha river as high as the falls for the purpose of spawning, but as in migrating they keep in the main current of the stream, and do not take the hook, and as no seining is permitted under our laws during the season of their migration, it was well nigh impossible for us to obtain any specimen of them from the Kanawha.

The California salmon put into the tributaries of the Potomac, undoubtedly lived and grew rapidly, many of them having been seen and caught at various points along the South Branch and Potomac as reported to the Commissioner for that district,

Some of these, as for instance, those caught in the Potomac reported by Col. J. Ed. Schley, of Jefferson county, and those reported by Mr. Mason, of Shepherdstown, had moved more than a hundred miles on their way seaward, and there seems to be no doubt that many of them, following their instinct, have reached the ocean. So that the problem as to whether the waters of that stream are suitable to them as a breeding place, appears to be satisfactorily solved.

We are compelled to wait some years to see whether the assertion, that they invariably return to the waters in which they are planted for the purpose of spawning, prove true in this; until then we do not think it advisable with the limited means at our command, and the increasing demand from the people for non-migratory fish, especially carp, to continue the hatching of this fish in considerable numbers.

Some specimens of land-locked-salmon have been taken in the tributaries of the Potomac. Most of the fish of the new varieties taken by fishermen were returned to the water, and we hope that the widening interest taken in the matter will induce their return whenever taken, until they shall have spawned and multiplied. We are informed that during the summer of 1880, at a point in the South Branch of the Potomac, near the Hanging Rock, below Romney, a small school of large fish were, during several weeks observed by various fishermen, among others by Messrs Isaac Parsons, of Hampshire, and Wm. Montgomery, of Romney, apparently engaged in spawning. The gentlemen by whom these fish were seen are perfectly familiar with all our native fish; they observed this school curiously and carefully, and are all decided and emphatic in declaring them not to have been native fish. They were undoubtedly of some one of the varieties introduced by this commission, but as none of them

where taken we cannot say certainly to which variety they belonged, though from the description given, and the facts as to stocking, etc., we incline to think this was a school of schoodic or land-locked-salmon. Of the hitherto-barren streams stocked with trout, several already afford good angling, but they should not yet be molested.

In November, 1879, some carp averaging then some two or three inches in length were obtained from the United States fish ponds at Washington. These fish being only a few in number and the first we were enabled to procure after many efforts, were deposited in three separate ponds at Romney, to be preserved as spawners, on account of their great value, to lessen the risk of loss, and observe more carefully the character of water in which they would live. One of these ponds was immediately at the hatch house, and was kept filled by a constant stream of the pure water used there direct from the springs. Another was at the Institution for the Deaf and Dumb and Blind, filled by water from the pipes of said Institution, and without any regular current or supply, but simply kept up as it was used by drawing from the pipes. The other was a pond in an open field, dug out in the clay ground to the depth of about five feet and supplied entirely by rain water conducted to it by a ditch, which was often entirely dry. Little difference could be perceived in the growth of the fish in the different ponds, and we now have all of them alive (except a few which escaped in an overflow of the dug pond caused by an extremely hard and long continued rain in June last.) They will now weigh four pounds each, and will be ready for spawning by the time we can have a spawning pond ready for them. Commissioner Lowry has since the last report succeeded in procuring and safely introducing into New River, at and above the falls, a number of Silver Perch, White Perch and Wall-eyed Pike, all spawners, and we expect in a few years to have the upper waters of New River finely stocked with these fish. He has also placed some Black Bass spawners in the Gauley river, enough, he thinks, to stock that stream. In addition to this there has been deposited in the waters of Greenbrier and New rivers one hundred and sixty-five thousand young shad, kindly furnished by Professor Baird. These with those which had been already deposited in these streams are deemed sufficient to test the question whether the shad will return from the Gulf to our waters to spawn. We are greatly encouraged to think they will and are hopeful of good results from them.

For fuller and more exact information as to our operations we refer to the following statements of distributions, &c., of fish:

DISTRIBUTIONS, &C., SINCE REPORT OF DECEMBER, 1878.

227,500 California Salmon, 45,700 Land-locked Salmon, 15,100 Brook Trout, 500 California Trout, 165,000 Shad, 595 Carp, 2,000 Grass Bass, making in all 456,800 of varieties foreign to our State placed in her waters. In addition to these we have transferred 1,410 native fish to some of our streams to other streams in which they did not exist.

These fish were distributed as follows :

REPORT OF FISH COMMISSIONERS.

IN THE FIRST CONGRESSIONAL DISTRICT.

California Salmon.

In Fish Creek at Burton.....	20,000
Buffalo Creek at Bethany.....	20,000
To E. L. Bartlett at Parkersburg.....	5,000
For Fish Creek at Littleton and Belton.....	75,000
Total California Salmon to First District.....	120,000

Land-Locked Salmon.

To Wheeling Creek, Marshall county.....	5,000
To Fish Creek, near Littleton.....	5,000
To E. L. Bartlett, Parkersburg.....	200
Total Land-Locked Salmon to First District.....	10,200

Carp.

November, To E. L. Bartlett, Parkersburg.....	30
June, To Hospital for Insane, Weston.....	9
" To W. L. Crawford, Hancock county.....	13
" To S. I. McColloch, Ohio county.....	60
" To Alexander Campbell, Brooke county.....	60
" To J. S. Freeman, Hancock county.....	60
" To Samuel Ellie, Hancock county.....	60
" To John Wright, Wheeling.....	6
" To various persons in small numbers.....	22
Total Carp to First District.....	320

IN THE SECOND CONGRESSIONAL DISTRICT.

California Salmon.

To tributaries of Potomac, Hampshire County.....	19,500
" Luney's Creek, Grant County.....	20,000
" Williams' ponds, Grant County.....	3,500
" Tygart's Valley River, Barbour and Randolph Counties.....	10,000
" P. F. Bartlett, Marion County.....	2,000
" J. W. Keys, Mineral County.....	500
" W. F. Werrick, Jefferson County.....	1,000
" Z. Wilson, Hampshire County.....	800
" W. H. Sale, Hampshire County.....	200
Total California Salmon Second District.....	57,500

Land-Locked Salmon.

To pond at Deaf and Dumb and Blind Institution.....	400
" Dillon's Run, Hampshire County.....	600
" West Fork, Upshur County.....	3,500
" Williams' pond, Grant County.....	1,500
" Tributaries of South Branch, Hampshire County.....	3,000
" J. W. Keys, Mineral County.....	200
" ponds and ditch at hatchery.....	500
" tributaries of South Branch, near Romney.....	15,000
Total land-locked salmon in Second District.....	24,700

Brook Trout.

To Mill Run, Hampshire County.....	600
" J. W. Keys, Mineral County.....	300
" ponds at hatchery.....	200
" Sir John's Run, Morgan County.....	9,000
Total brook trout in Second District.....	10,100

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Grass Bass.

To South Branch, near Romney..... 2,000

Carp.

To Ponds Deaf and Dumb and Blind Institution..... 40
 To J. L. Pierce, Mineral county..... 30
 To P. F. Bartlett, Marion county..... 30
 To W. F. Werrick, Jefferson county..... 20
 To Z. Wilson, Hampshire county..... 30
 To James Patterson, Hampshire county..... 30
 To W. H. Sale, Hampshire county..... 20
 To Garret Cunningham, Hardy county..... 10
 Total Carp in Second District..... 210

California Trout.

In small streams near Romney..... 500

Native Fish.

To South Branch, near Romney, Ohio River Jack..... 50
 To " " " " Blue Cat..... 5
 To " " " " Sturgeon..... 5
 In Tygart's Valley River, Barbour county, Mill Pond Roach..... 600
 In West Fork River, Upshur county, Mill Pond Roach..... 500
 To P. F. Bartlett, Marion county, Mill Pond Roach..... 100
 Total Native Fish in First District..... 1,250

IN THIRD CONGRESSIONAL DISTRICT.

California Salmon.

To Greenbrier River..... 10,000
 To Greenbrier, near Ronceverte..... 20,000
 To New River, near Hinton..... 10,000
 To Elk River, near Charleston..... 10,000
 Total California Salmon in Third District..... 50,000

Land-Locked Salmon.

To White Sulphur, Greenbrier county..... 3,000
 To New River and tributaries, Summers county..... 6,000
 Total Land-Locked Salmon in Third District..... 9,000

Brook Trout.

To Rivers and Creeks near Hinton, Summers county..... 5,000

Shad.

To New River, at Caldwell and Hinton..... 165,000

Carp.

To R. C. Lilley, Summers county..... 15
 To Andrew Mann, Summers county..... 20
 To Pond near Hinton..... 30
 Total Carp to Third District..... 65

Native Fish.

To New River Falls, Silver Perch (Spawners).....	30
To New River, near Hinton, Wall-eyed Pike (Spawners).....	43
To New River, near Hinton, White Perch (Spawners).....	18
To Lower New River, Black Bass (Spawners).....	40
To Gauley, Black Bass (Spawners).....	58
Also, a few Sturgeon and Buffalo Fish placed above New River Falls.	

In addition to the fish already distributed, we have ordered 100,000 California Trout and 100,000 Land-Locked Salmon ova, which will be hatched and ready to distribute in a few months.

We regret that we are unable to make in this report as favorable a showing in regard to the number of fish distributed in the State since the date of our report made in December, 1878, as was made in that report for the time preceding it, but we feel that we have done all that could have been reasonably hoped for. The difference of \$500, between the annual appropriations for the last two years and the appropriations of the two preceding years, so reduced the fund at our command as to render it very difficult to successfully carry out the plans we had devised and partially executed. It was impossible for us to increase our facilities for doing the work expected of us, and useless to devise any new plan to meet the greatly increased calls made upon us, indeed, we were unable to fill our own expectations, and it was utterly hopeless to endeavor to supply the demands of the citizens of the State as made upon us; and, though, this is a cause of regret to us, yet the wonderfully increased interest taken by the people in the subject of fish culture is a matter of congratulation and has been a source of gratification to us, cheering us as it does in the discharge of our duties and in our efforts to effect the objects of the acts under which we were appointed. Objects, in which, at first, so little interest was manifested, especially among those citizens to whose benefit fish culture will most largely enure, and to whom, therefore, we had naturally looked for encouragement, viz: The farmers of the State, and more particularly those of them owning properties adjacent to rivers and creeks. We are glad to be able to say that now among them this want of interest is fast disappearing as they begin to investigate the matter, and that our warmest words of encouragement and most active aid comes from them.

In many counties of the State farmers either have constructed, or are ready to construct as soon as they are assured we can stock them, ponds for the raising of fish, especially Carp, whose great value to them they seem at once to appreciate. The applications for Carp to stock such ponds have been far in excess of our ability to meet them. We have been therefore compelled to deny many applications, and to limit the number of fish delivered to such persons as we were able to supply.

We have now on hand a couple of hundred of young Carp, received late in November last, which we were unable to distribute on account of the coldness of the weather. These we expect to divide among persons who have applied for them as soon in the spring as it is proper to move them. But if we had these hundreds multiplied by hundreds we do not think we could fully meet the demand for them. There are, however, in our possession, some Carp (those received in November,

(1879,) which will spawn during next summer, and we trust, if proper provision is made by the Legislature to meet the necessary expenses of hatching them, to be able to supply hereafter all reasonable demands, as in case no misfortune happens the fish, and we are enabled to construct proper hatching-ponds, &c., we may expect to have, by next fall, thousands of young Carp of our own raising instead of, as we have had this year, a few hundred obtained at considerable expense from the United States Fish Commissioners at Washington.

And here we beg leave to call attention again to the great value of this fish to the farmers and people of our State, whether they reside near streams or not; and in doing so we quote from an article in the *American Agriculturist* urging upon farmers the cultivation of Carp:

"The introduction of this new food fish will be of great interest and importance to all inland communities, for there is no ditch, pond or dam, nor any boggy or muddy spot which can be converted into a pond in which they will not thrive. It will be strange if within twenty years Carp do not become as common domestic animals as ducks and pigeons.

"The Carp is king of his tribe, and those who know do not hesitate to say that as a food fish it far excels the best of them. It is easily propagated and reared.

"Their fecundity is great; a fish weighing four to five pounds lays 400,000 or more eggs, and one of ten to fifteen pounds 1,500,000.

"The actual rate of increase is very great, owing in part to the fact that the parents do not devour their young. The one hundred and twenty Carp brought to Washington (by the United States Government) two years ago have increased to at least twenty thousand. It is thus able to populate a body of water to the fullest extent, filling up the available space with their own kind, while the carnivorous species require that a large number of other fishes on which they prey inhabit the waters with them. Unlike the majority of American food fishes their diet is purely vegetable. They are harmless to other fish inhabiting the same waters.

"The fact that so many of our native fish devour the smaller fish of every kind is a great bar to their increase, especially in small bodies of water, but Carp introduced into such waters fill a vacancy, and not only do not decrease the number of other fish, but increasing so rapidly as they do, supply them with food, and thus enable the existence of large additional numbers of carnivorous fish.

"It is very hardy in all stages of its growth. Its growth is very rapid.

"The rate of growth depends upon many things, the temperature of the water, the quality and quantity of its food, and the nature of the bottom. In rivers and lakes they attain the greatest size. The normal weight to which Carp may attain in Europe in three years is an average of three to three and three-fourths pounds."

But our own fish, which are not yet much over one year old, will, we are confident, weigh from two to two and one-half pounds. Those at the Hospital for the Insane, at Weston, grew one inch a month; those furnished W. L. Crawford grew six inches in five months; those

in Washington, four summers old, now weigh from nine to ten pounds.

The Texas Fish Commissioner reports this winter five caught out of a pond in which they had been put the February previous, varying in length from 19 to 22 inches, and weighing about four pounds each. At the time they were placed in the pond they weighed about three ounces.

There is scarcely a farm in our State on which the owner cannot, at little expense, prepare a first-rate pond for the rearing of carp. A pond 30 or 40 feet broad by 60 or 75 feet long, and 4 to 6 feet deep, sloping gradually from the shore to the middle, is amply large enough to raise all the carp an ordinary family would want in a year. It should have a muddy bottom, and have planted in it and along its sides water grasses and plants.

The cost of such a pond may be inconsiderable. The cost of the food, if the pond be supplied with grasses, &c., is nothing until the fish have attained some size and begin to crowd each other, and then when there ceases to be in the pond a sufficiency of food, they may be fed with bread crumbs, corn meal, leaves of cabbage, lettuce, turnips, &c., cut small, or with corn, potatoes, or other cereals or roots. The cereals or roots ought to be boiled before feeding, and no more food should be given at a time than they can immediately consume without leaving a residuum. Full instructions as to the mode of constructing ponds, care of the fish, character of the food, and manner of feeding them, can easily be obtained through us, and as we have said, we see no reason why almost every farmer may not have his own ponds, and raise all the carp he wishes to, as readily as he now raises his chickens and pigs.

It is less than thirty years since the artificial propagation of fishes was begun in Europe, now it is as firmly established as is the growing of grain or fruit.

In the United States commissioners of fish and fisheries have been established in nearly all the States. The annual appropriations made by the several States for the propagation of fish, &c., vary from one thousand to twenty-five thousand dollars. In some of the States the work is just begun, in others it has been going on for some years, and in these States the result has been not only satisfactory but has justified increased appropriations, and in none of them has there ever been a thought of abandoning the work, but in them all the interest has steadily increased, as time continued to prove its benefits.

As an instance of the interest being felt in our own State we publish the following extract from one of the many letters received by us. It is from Mr. E. L. Bartlett, a farmer residing near Parkersburg, who has made admirable ponds for fish culture:

DECEMBER 6th, 1880.

"H. B. MILLER, Esq.:

"*Dear Sir*:—I have yours of the 3d inst. before me, and hasten to reply.

"The land-locked salmon you sent me have done as well as fish could do anywhere. The first six months I had them I grew them

fully one inch per month: Since the first six months the growth in length has not been so great, owing, perhaps, to their being in a small pond, and not getting the food necessary to produce so rapid growth in large fish, as I have not fed them regularly. The California salmon you sent me, I placed in a pond to themselves. They grew well, and I was much pleased with them, and greatly amused by them of evenings, jumping out of the water, catching mosquitoes and gnats. But, to my surprise, one morning I went to the pond and found that a crawfish had cut a hole through the bank and let off most of the water, and the fish had escaped with the water. I stopped the hole, searched for the fish, found twelve in the ditch below and replaced them in the same pond; but they were soon missing. On draining the pond I found no Salmon, but found a good sized Bass, and my opinion is that while the Salmon were passing out the Bass went in and devoured all that were left. Whilst I have been unfortunate with the Salmon I have no doubt of their doing well in my ponds. I had no fish to grow better or look more thrifty than the California Salmon while I had them.

The Trout have done fully as well as the other varieties; are large and fat, and are now arranging to spawn. I had some Trout, Landlocked Salmon and Bass on exhibition at our fair in September last. They attracted as much or more attention than anything on exhibition."

In order to enable us to carry on successfully and economically our operations for the future, it is necessary that in addition to the amount allowed for the purchase and distribution of fish and the general expenses of the commission there should be a fund sufficient to enclose substantially the grounds belonging to the State, and to make necessary ponds and improvements of a permanent and substantial character. This will probably cost \$500. New ponds are not only necessary to the hatching of Carp, but also to economy and efficiency and will enable us to more closely observe the natures and habits of new varieties of fish, and to determine which will prove valuable to us and adapted to our waters, and thereby save the risk and expense of introducing varieties which might prove valueless in our waters.

The enforcement of the law protecting our native fishes during the spawning season and the stopping of seining in the creeks entirely, has already shown good results in the large increase of young fish during the past summer.

We desire again to tender our acknowledgements to Prof. S. F. Baird, United States Commissioner of Fish and Fisheries; to Major T. B. Furguson, of the Maryland Commission, for many acts of courtesy and kindness; to Vice President Wickham, of the Chesapeake & Ohio Railroad, for transportation furnished for fish and messengers, and to Vice President Keyser, of the Baltimore & Ohio Railroad, for transportation of fish. We are also under obligations to various parties in this State for aid in our work.

REPORT OF FISH COMMISSIONERS.

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Decem'r 22—Paid expenses to Washington for carp.....	27 27
Decem'r 22—Paid expenses B. & O. express freight on carp.....	6 25
Balance.....	135 46
	\$300 00

Financial Statement of C. S. White, Commissioner of Fishes.

DEBIT.

To amount received of H. B. Miller, Treasurer, to pay expenses incurred in purchasing and distributing fish and in discharge of duties in Second Congressional District—1879, May, \$100 00; 1880, May, \$200 00.....	\$300 00
	\$300 0

CREDIT.

By amount paid Lewis Walters, transporting fish from Webster to Beverly.....	\$20 00
By balance due on R. Breunnen's receipt, filed with last financial statement in office of Secretary of State	115 00
By amount paid for personal expenses in distributing fish, etc., up to January, 1879	49 20
By amount paid for postage and telegrams up to January, 1881	15 50
By amount paid to E. E. Sollars for transportation of fish, etc., to October, 1878	27 50
By amount paid to I. V. Parker for transportation of fish, etc., \$4 50 and \$9 25.....	13 75
By amount paid to M. Banks for transportation of fish.....	24 75
By amount paid for expressage on eggs, 55 and 60 cents	1 15
By amount paid to Z. Graham, expenses taking fish to Webster, February, 1878.....	5 70
By amount paid for tolls on bridge and road to hatchery to November, 1878.....	10 00
By amount paid to W. F. Davis for fish cans \$26 45, less \$9 00.....	17 45
	\$300 00

Financial Statement of N. M. Lowry, Commissioner of Fishes.

DEBIT.

To amount received of H. B. Miller, Treasurer, to pay expenses, etc.....	\$300 00
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CREDIT.

By amount paid Z. Graham for transporting land-locked salmon	\$56 12
" " " same for transporting California salmon.....	56 38
" " " constructing pond to receive Carp	48 06
" " " personal expenses and bringing Carp from Washington.....	42 00
" " " for Silver Perch and transportation of them.....	10 60
" " " Wall-eyed Pike and expenses of messenger.....	19 50
" " " White Perch and expenses of messenger	15 00
" " " Black Bass for Gauley and New river and transportation of them	25 00
" " " telegrams	3 50
" " " postage.....	1 50
Total.....	\$277 60
Balance in hands of Commissioner Lowry, December, 1880.....	\$22 40

It will thus be seen that there was in the hands of the treasurer on the 31st day of December, 1880, the sum of three hundred and ninety-nine dollars and two cents. This balance will, however, be consumed in paying for 100,000 California Trout eggs, and 100,000 Land-locked Salmon eggs already ordered, transportation and hatching, in distributing the fish when hatched, and in paying unaudited bills, &c.

H. B. MILLER,
C. S. WHITE,
N. M. LOWRY,

Commissioners of Fishes of West Virginia.

LIST OF COMMISSIONERS OF FISH AND FISHERIES.

UNITED STATES.

Prof. Spencer F. Baird..... Washington, D. C.

ALABAMA.

Charles S. G. Dorster..... Prattsville.

D. B. Hundley..... Courtland.

ARKANSAS.

N. B. Pierce..... Osage Mills.

CALIFORNIA.

S. R. Throckmorton..... San Francisco,

B. B. Redding..... San Francisco,

J. D. Farwell..... Niles, Alameda county.

COLORADO.

W. E. Sisty..... Brookvale.

CONNECTICUT.

W. M. Hudson..... Hartford.

Robert G. Pike..... Middletown.

G. N. Woodruff..... Sherman.

GEORGIA.

Thomas P. James..... Atlanta.

ILLINOIS.

N. K. Fairbank..... Chicago.

S. P. Bartlett..... Quincy.

IOWA.

B. F. Shaw..... Anamosa.

KANSAS.

D. B. Long..... Ellsworth.

KENTUCKY.

William Griffith, President..... Louisville.

Hon. John A. Steel..... Midway.

Dr. William Van Antwerp..... Mount Sterling.

A. H. Goble..... Collettsburg.

Hon. C. J. Walton..... Munfordsville.

Dr. S. W. Coombs..... Bowling Green.

John B. Walker..... Madisonville.

W. C. Price..... Danville.

P. H. Darby..... Princeton.

Hon. M. J. Chambers..... Independence, Kenton county

MAINE.

E. M. Stilwell..... Bangor.

Everett Smith..... Portland.

MARYLAND.

Major T. B. Ferguson..... Baltimore.

Thomas Hughlett..... Easton.

MASSACHUSETTS.

Theodore Lyman..... Brookline.

E. A. Brackett..... Winchester.

Asa French..... Boston.

MICHIGAN.

Eli R. Miller..... Richland.

A. J. Kellogg..... Detroit.

Dr. J. C. Parker..... Grand Rapids.

MINNESOTA.

Daniel Cameron..... La Crescent.

Wm. W. Sweeney, M. D. Red Wing.

R. Ormsby Sweeney..... St. Paul.

MISSOURI.

Hon. Silas Woodson.....St. Joseph.
 Hon. H. Clay Ewing.....Jefferson City.
 John Reid.....Lexington.

NEBRASKA.

R. R. Livingstone.....Plattsmouth.
 H. S. Kelley.....Red Cloud.
 W. L. May.....Fremont.

NEVADA.

H. G. Parker.....Carson City.

NEW HAMPSHIRE.

Samuel Webber.....Manchester.
 Luther Hayes.....South Milton.
 Albina H. Powers.....Plymouth.

NEW JERSEY.

Dr. B. P. Howll.....Woodberry.
 E. J. Anderson.....Trenton.
 Theo. Morford.....Newton.

NEW YORK.

Hon. R. B. Roosevelt.....New York.
 Edward M. Smith.....Rochester
 Richard U. Sherman.....New Hartford, Oneida county.
 Eugene G. Blackford.....Brooklyn.

NORTH CAROLINA.

P. M. Wilson.....Raleigh.

OHIO.

J. C. Fisher.....Coshocton
 R. Cummings.....Toledo
 L. A. Harris.....Cincinnati

PENNSYLVANIA.

H. J. Reider.....Easton.
 B. L. Hewitt.....Hollidaysburg.
 James Duffy.....Marietta.
 John Hummel.....Selhingsgrove.
 Robert Dalzell.....Pittsburgh.
 G. M. Miller.....Wilksbarre.

RHODE ISLAND.

Newton Dexter.....Providence.
 John H. Barden.....Rockland.
 Alfred A. Reid.....Providence.

SOUTH CAROLINA.

A. P. Butler.....Columbia.

TENNESSEE.

W. W. McDowell.....Memphis
 George F. Akers.....Nashville.
 Hon. T. W. Turley.....Knoxville.

TEXAS.

J. H. Dinkins.....Austin.

UTAH.

Prof. J. L. Barfoot.....Salt Lake City.

VERMONT.

Dr. M. Goldsmith.....Rutland.
 Charles Barrett.....Grafton.

VIRGINIA.

M. McDonald.....Lexington.

WEST VIRGINIA.

Henry B. Miller.....Wheeling.
 C. S. White.....Romney.
 N. M. Lowry.....Hinton.

FISH COMMISSIONERS REPORT.

WISCONSIN.

Gov. William E. Smith.....Madison.
 Philo Dunning.....Madison.
 J. V. Jones Oshkosh.
 C. L. Valentine.....Jamesville.
 Mark Douglas.....Melrose, Jackson county.
 John L. Antisdell.....Milwaukee.
 C. Hutchinson.....Beetown, Grant county.

CANADA.

W. H. Whitcher.....Ottawa, Ontario.
 S. Wilmot.....New Castle, Ontario

NEW BRUNSWICK.

W. F. Venning.....St. John

NOVA SCOTIA.

W. H. Rogers.....Amherst.

PRINCE EDWARDS ISLAND.

J. H. Duvar.....Alberton